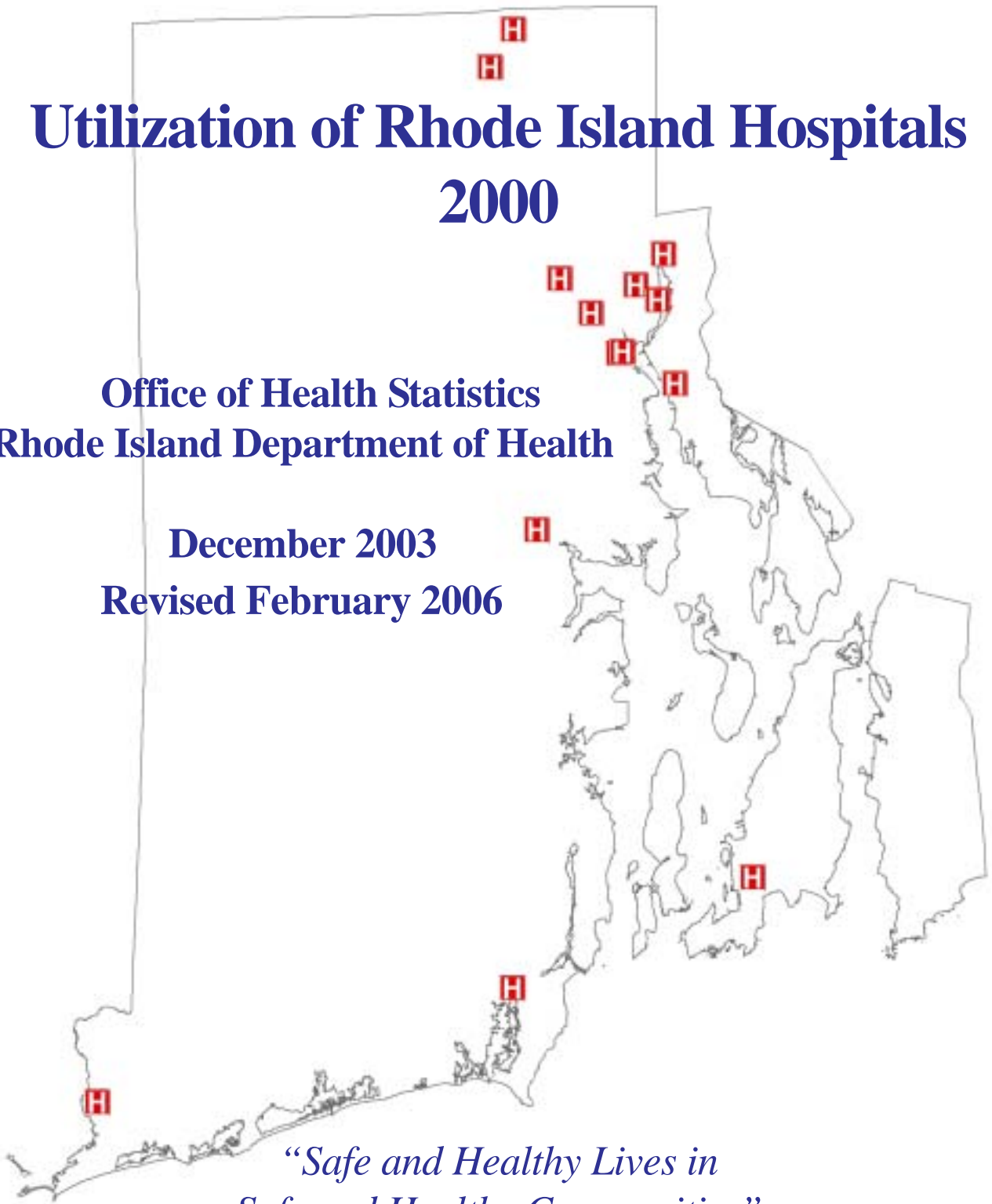


Utilization of Rhode Island Hospitals 2000

Office of Health Statistics
Rhode Island Department of Health

December 2003
Revised February 2006



*“Safe and Healthy Lives in
Safe and Healthy Communities”*

Donald L. Carcieri
Governor

Patricia A. Nolan, MD, MPH
Director of Health



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*“Safe and Healthy Lives in
Safe and Healthy Communities”*

PREFACE

This publication, "Utilization of Rhode Island Hospitals 2000," summarizes inpatient utilization data reported to the Rhode Island Department of Health by the state's private acute care and inpatient rehabilitation hospitals during the period indicated. It has been produced as a reference document for health care policy makers and representatives of health plans and health plan purchasers, as well as other interested parties in the state.

Hospital discharge data have been reported as a requirement for hospital licensure since October 1, 1989. Further information on hospital inpatient utilization, including information from prior years and copies of public use data files, are available from staff of the Office of Health Statistics, (401) 222-2550. Information also appears on the Rhode Island Department of Health web site, www.health.ri.gov.

Acknowledgments

The reporting of the information on which this document is based involves the careful effort of many staff persons in the state's private, acute-care hospitals. Their commitment to producing complete, accurate data is essential to the usefulness of this information system and is acknowledged with gratitude by the authors. The efforts of the Hospital Association of Rhode Island and its contractor, Solucient, Inc., in coordinating the editing and submission of data from the state's eleven acute-care general hospitals are also greatly appreciated. The contributions of these participants are key elements of the public/private partnership supporting the state's hospital discharge data system.

The authors also thank Janice Fontes for her oversight and maintenance activities in support of the hospital discharge database for the Office of Health Statistics and for her computer programming efforts in support of this report.

For Additional Information

The Rhode Island Department of Health website (<http://www.health.ri.gov>) has additional information on the hospital discharge database. Information on how to obtain a public use data file may be obtained at <http://www.health.ri.gov/chic/statistics/hdd.htm>.

Information on hospital financial performance may be obtained at <http://www.health.ri.gov/chic/performance/home.htm>.

Information on the quality of hospital care may be obtained at <http://www.health.ri.gov/chic/performance/series.htm>.

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EXECUTIVE SUMMARY

Rhode Island's non-Federal short-stay hospitals reported 121,447 discharges with 661,224 days of care (excluding discharges of newborns) for the period January 1, 2000 to December 31, 2000. The largest volume hospital, Rhode Island Hospital, provided 151,228 days of care to 27,393 discharges; the lowest volume hospital, Rehabilitation Hospital, provided 14,797 days of care to 738 discharges.

The statewide occupancy rate of licensed beds was 56.5 percent. The occupancy rate of staffed beds was 73.9 percent; by hospital this rate varied from 53.5 percent to 112.0 percent. The hospital with the shortest average length of stay, 3.5 days, and the lowest average charges per discharge (\$7,325) was Women & Infants Hospital of Rhode Island, whose case-mix is largely obstetrical, perinatal, and gynecological cases. Among other hospitals, the average stay varied from 4.1 days to 32.3 days, and the average charges varied from \$7,380 to \$27,347. The average length of stay for all non-Federal hospitals combined (including psychiatric and rehabilitation hospitals) was 5.4 days, and the average charges were \$12,236. Note that average charges by hospital have not been adjusted for variations in case-mix complexity. Also, actual reimbursement to hospitals is generally lower than charges.

UTILIZATION: Hospital discharge rates per 10,000 population were similar in Rhode Island (1,158.5) and the United States (1,140.1). Discharge rates increased with age from the youngest age group, 0 - 14 years, to the oldest, 65 years and over. More hospital days were used by women (372,819) than by men (288,346)¹, with the difference appearing among women in the principal child-bearing years (ages 15 - 44) and among the elderly. While patients 65 years and over comprised approximately 14.5% of the state's population in 2000, they accounted for 43.1% of all discharges and used 49.4% of all days of care.

DIAGNOSES: The most commonly reported principal diagnoses were in the broad categories of diseases of the circulatory system (21,956 discharges), diagnoses related to childbirth (14,221 discharges), mental disorders (12,475 discharges), diseases of the respiratory system (12,209 discharges), and diseases of the digestive system (11,147 discharges). Discharge rates per 10,000 population in Rhode Island were generally higher than national rates for mental disorders (54.1 percent higher) and neoplasms (19.8 percent higher), and lower for endocrine, nutritional, and metabolic diseases and immunity disorders (28.7 percent lower) and complications of pregnancy, childbirth, and the puerperium (11.0 percent lower).

PROCEDURES: Most hospitalizations (60.3 percent) involved the performance of one or more surgical or major diagnostic procedures. A total of 167,713 procedures were reported, corresponding to a rate of 1,599.8 per 10,000 population. The three most commonly performed procedures for males were: arteriography and angiocardiology using contrast material (6,801), removal of coronary artery obstruction (2,890), and cardiac catheterization (2,779). For females, the most commonly performed procedures were: repair of current obstetric laceration (5,578), arteriography and angiocardiology

¹Gender was not reported for 21 discharges, comprising 59 of the hospital days.

using contrast material (4,402), and cesarean section (2,862).

DELIVERY OF NEWBORNS: Among the 12,915 deliveries of newborns reported at the state's seven hospitals with obstetric services, the primary cesarean rate was 16.0 percent, ranging from 9.2 percent to 17.4 percent. Among births to women with previous cesarean sections, nearly a third (32.1 percent) were by vaginal delivery. Overall, 22.1 percent of births were by cesarean section. The average length of stay for vaginal deliveries was 2.4 days; for cesarean section it was 4.8 days.

INJURIES: There were 6,026 discharges with a principal diagnosis of injury and poisoning, excluding late effects of injury and complications of surgical and medical care. Of these, the external cause of injury was reported on 91.6 percent. Leading external causes reported were falls (2,975 discharges), motor vehicle injuries (742 discharges), and self-inflicted injuries (426 discharges).

INTRODUCTION

This report provides statistics regarding the use of Rhode Island's non-Federal short-stay hospitals during the period January 1, 2000 - December 31, 2000. The data were collected by means of a statewide reporting system that was established as of October 1, 1989 by regulations promulgated by the Rhode Island Department of Health under its licensure authority (Rhode Island General Laws 23-17-10).² The data for this report came from 100% reporting of inpatient records by all non-Federal short-stay hospitals in the state.

Measurements of hospital use are presented in this report by hospital, patient age, patient sex, diagnostic code groupings, procedure code groupings, and grouped charges. Tables on special topics, including obstetrical utilization and external cause of injury, are also presented. To the extent possible, data have been analyzed and presented in a manner comparable to that used with annual summary reports from the National Hospital Discharge Survey (see Reference 1 on page 32). Consistent with the national reports, all data with respect to discharge of newborn infants are excluded from this report.

Medical data including diagnoses and procedures were coded according to the *International Classification of Diseases, 9th Revision, Clinical Modification*, or ICD-9-CM (see Reference 2 on page 32). The first eleven listed diagnoses and the first ten listed procedures on the hospital medical record are reported for each discharge. The conditions diagnosed and procedures performed are presented by major diagnostic and procedure groups of the ICD-9-CM. Within these diagnostic and procedure groups, some specific categories were selected for presentation because of large frequencies or special interest.

Familiarity with the definitions used in the report is important for interpreting the data and for making comparisons with statistical data on short-stay hospital use that are available from other sources. Definitions of the terms and groupings used in this report are included as footnotes to tables and in Appendices 1-4.

²Current licensure regulations for hospitalizations, including detailed data reporting specifications, are available on the website of the Rhode Island Secretary of State (www.rules.state.ri.us/rules/released/pdf/DOH/DOH_2372.pdf) or upon request to the Division of Health Services Regulation, Rhode Island Department of Health, 3 Capitol Hill, Providence, RI 02908 (Telephone: 401-222-6015).

SUMMARY STATISTICS BY HOSPITAL

The information contained in the Rhode Island Hospital Discharge Data has been reported by 14 non-Federal short-stay hospitals in Rhode Island. They are comprised of 5 teaching hospitals providing general acute care, 6 other general acute care hospitals, 2 psychiatric teaching hospitals, and 1 for-profit rehabilitation hospital. Hospital characteristics are described in Table 1, based on information reported in the *American Hospital Association: A Guide to United States Hospitals, Health Care Systems, Networks, Alliances, Health Organizations, Agencies, Providers 2000* (see Reference 3 on page 32), and from the Office of Health Statistics of the Rhode Island Department of Health.

The most striking statistic in Table 1 is the all-hospital licensed occupancy rate of 56.5%. Five hospitals experienced occupancy rates of less than 50%, with 36.4% the lowest rate. The highest licensed occupancy rate of 112.0% was for a hospital that provides primarily psychiatric services to children, Emma Pendleton Bradley Hospital.

Hospitals reported a total of 2,451 staffed beds of the total 3,204 licensed beds. The all-hospital occupancy rate of staffed beds was 73.9%. The staffed occupancy rates ranged from 53.5% to 112.0%. (Figure 1)

Table 2 presents utilization data and average charges per discharge for the 14 Rhode Island hospitals reporting discharge data. Utilization data presented include: discharges, patient days, and average length of stay.

There were 121,447 discharges comprising 661,224 days from all hospitals, excluding discharges of newborns. Discharges by hospital ranged from a low of 738 to a high of 27,393, with the

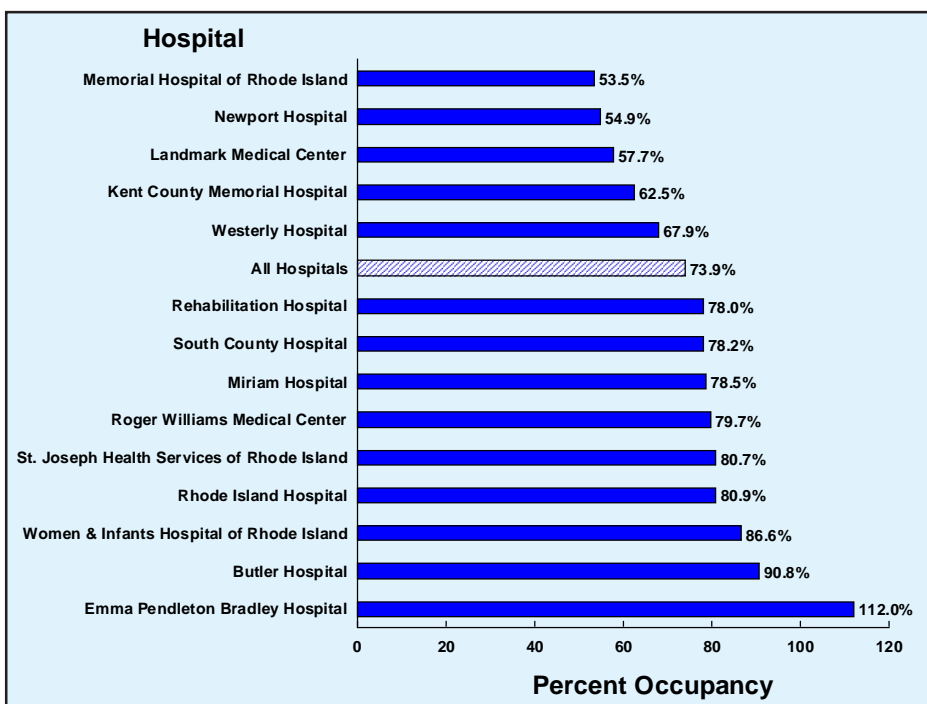


Figure 1. Staffed Occupancy Rate by Hospital, Rhode Island, 2000

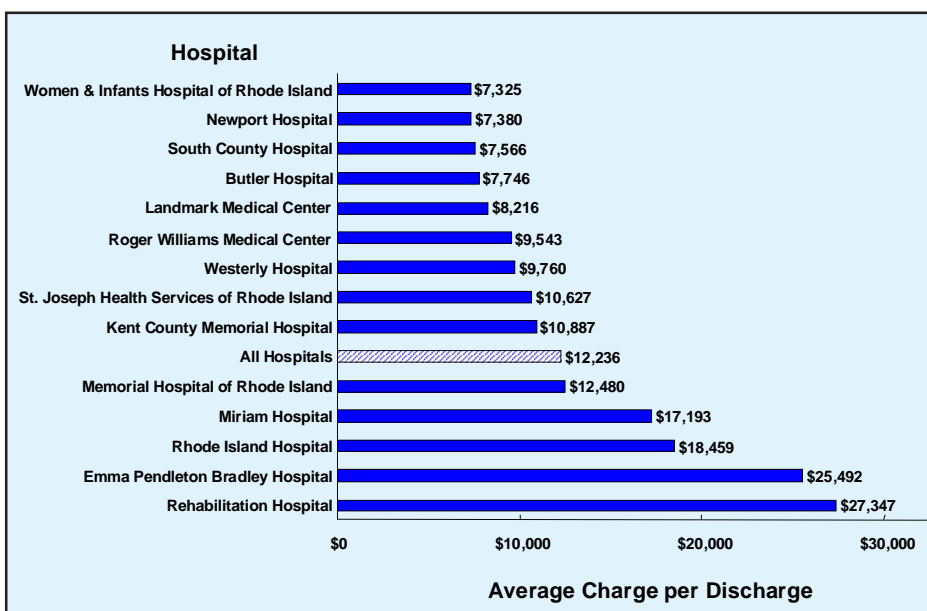


Figure 2. Average Charge per Discharge by Hospital, Rhode Island, 2000

Table 1. Characteristics of Rhode Island hospitals, 2000¹

Hospital	Licensed Beds ²	Staffed Beds ²	Licensed Occupancy	Staffed Occupancy
All Hospitals	3,204	2,451	56.5%	73.9%
Emma Pendleton Bradley Hospital [F,I,1,4]	60	60	112.0%	112.0%
Butler Hospital [F,I,1,5]	105	105	90.8%	90.8%
Kent County Memorial Hospital [B,D,E,H,1,5]	359	338	58.8%	62.5%
Landmark Medical Center [A,D,E,1]	214	147	39.6%	57.7%
Memorial Hospital of Rhode Island [B,D,E,H,I,1]	294	200	36.4%	53.5%
Miriam Hospital [A,E,H,I,1,4]	247	203	64.5%	78.5%
Newport Hospital [B,D,E,1,4]	176	140	43.6%	54.9%
Rehabilitation Hospital [G,3,6]	82	52	49.4%	78.0%
Rhode Island Hospital [B,E,H,I,1,4]	719	512	57.6%	80.9%
Roger Williams Medical Center [A,E,H,I,1]	220	146	52.9%	79.7%
South County Hospital [B,D,E,1]	100	76	59.4%	78.2%
St. Joseph Health Services of Rhode Island [A,E,2]	366	260	57.3%	80.7%
Westerly Hospital [B,D,E,1]	125	75	40.7%	67.9%
Women & Infants Hospital of Rhode Island [C,D,H,I,1,5]	137	137	86.6%	86.6%

Types of Services:

- [A] General Med/Surg Adult
- [B] General Med/Surg Adult & Pediatrics
- [C] General Acute Care
- [D] Obstetrics
- [E] Emergency Room
- [F] Psychiatric Specialty Hospital
- [G] Hospital Based Rehabilitation
- [H] Meets State of Rhode Island Criteria for Tertiary Status³
- [I] Teaching Hospital

Types of Ownership:

- [1] Not-for-profit
- [2] Not-for-profit, church
- [3] For profit

Network Affiliations:

- [4] Lifespan
- [5] Care New England
- [6] Partnership

¹Source: American Hospital Association: A Guide to United States Hospitals, Health Care Systems, Networks, Alliances, Health Organizations, Agencies, Providers 2000 (see Reference 3 on page 32).

²Beds exclude bassinets.

³Tertiary care services include: cardiac catheterization, positron emission tomography, linear accelerators, open heart surgery, organ transplantation, and neonatal intensive care services, per Rules and Regulations for Determination of Need for New Health Care Equipment and New Institutional Health Services (R23-15-CON, State of Rhode Island and Providence Plantations, Department of Health June 1979, January 2, 2000) (see Reference 4 on page 32).

average for all hospitals 8,675. Patient days by hospital ranged from a low of 14,797 to a high of 151,228, with the average for all hospitals 47,230.

The all-hospital average length of stay was 5.4 days. The average length of stay by hospital ranged from 3.5 days for Women & Infants Hospital of Rhode Island to 32.3 days for Emma Pendleton Bradley Hospital, a psychiatric hospital for children.

The all-hospital average charge per discharge was \$12,236, ranging from \$7,325 for Women & Infants Hospital to \$27,347 for Rehabilitation Hospital (Figure 2). These averages are not adjusted for the different complexity of the hospitals' case-mix. Actual reimbursement to the hospitals per discharge will generally be lower than average charges, depending on the specific arrangements under which payers reimburse hospitals. Data on actual payments to the hospitals are not available in the discharge data, but may be found in reports on aggregate hospital financial performance, *Hospital Financial Operations Dataset 2001*, available at <http://www.health.ri.gov/chic/performance/HOSPITAL-DATASE.xls>.

Table 2. Hospital utilization, Rhode Island, 2000

Discharges of newborn infants are excluded.

Hospital	Discharges	Patient Days ¹	Average Length of Stay ¹	Average Charge per Discharge
All Hospitals	121,447	661,224	5.4	\$12,236
Emma Pendleton Bradley Hospital	759	24,535	32.3	\$25,492
Butler Hospital	4,902	34,788	7.1	\$7,746
Kent County Memorial Hospital	13,723	77,071	5.6	\$10,887
Landmark Medical Center	7,087	30,947	4.4	\$8,216
Memorial Hospital of Rhode Island	7,837	39,037	5.0	\$12,480
Miriam Hospital	11,714	58,175	5.0	\$17,193
Newport Hospital	5,668	28,038	4.9	\$7,380
Rehabilitation Hospital	738	14,797	20.1	\$27,347
Rhode Island Hospital	27,393	151,228	5.5	\$18,459
Roger Williams Medical Center	8,269	42,481	5.1	\$9,543
South County Hospital	5,241	21,692	4.1	\$7,566
St. Joseph Health Services of Rhode Island	11,191	76,547	6.8	\$10,627
Westerly Hospital	4,440	18,590	4.2	\$9,760
Women & Infants Hospital of Rhode Island	12,485	43,298	3.5	\$7,325

¹Patient days and average length of stay are computed after adjusting patients admitted and discharged on the same day to a stay of one day.

UTILIZATION BY AGE GROUP AND GENDER

Table 3 presents utilization data for Rhode Island hospitals by selected age groups and gender. Utilization data presented include: discharges, patient days, and average length of stay, while age groups used are: under 15 years, 15-44 years, 45-64 years, and 65 years and over. Table 4 presents the discharge and patient day data from Table 3, but on the basis of rate per 1,000 population.

As would be expected, all measures of hospital utilization increased with age, and women were hospitalized more often and used more days of care than men. The discharge rate per 1,000 population for all ages was 115.8; by age group the rate per 1,000 population ranged from a low of 33.8 for those under 15 years to a high of 343.1 for those 65 years and over.

The patient day rate per 1,000 population showed a similar pattern. The patient day rate per 1,000 population for all ages was 630.7; by age group the rate per 1,000 population ranged from a low of 244.8 for those under 15 years to a high of 2,143.2 for those 65 years and over.

With the exception of those under age 15, the average length of stay also increased with age. The average length of stay for those under 15 was 7.2. For the other age groups, length of stay ranged from 4.1 for those ages 15-44 to 6.2 for those 65 years and over.

A significant statistic with respect to age was that while patients 65 years and over comprised approximately 14.5% of the state's population, they accounted for 43.1% of all discharges and used 49.4% of all days of care. (Figure 3 and Figure 4)

An analysis of discharges and patient days by gender shows that females had significantly higher rates per 1,000 population than males. For all ages, females had a discharge rate per 1,000 population of 133.6 compared to the male rate of 96.6 (Figure 5), and the patient day rate per 1,000 population for females was 684.5 compared to the male rate of 572.5 (Figure 6). Virtually all of the disparity arose in the age group 15-44 (which includes the peak child-bearing years), where the discharge rate was 114.6 for females and 46.9 for males, and the patient day rate was 422.0 for females and 239.7 for males. In general, the average length of stay showed less variation by gender. The exception was the 15-44 year group where the length of stay for females was 3.7 days (heavily weighted by obstetrical cases) compared to 5.1 for males.

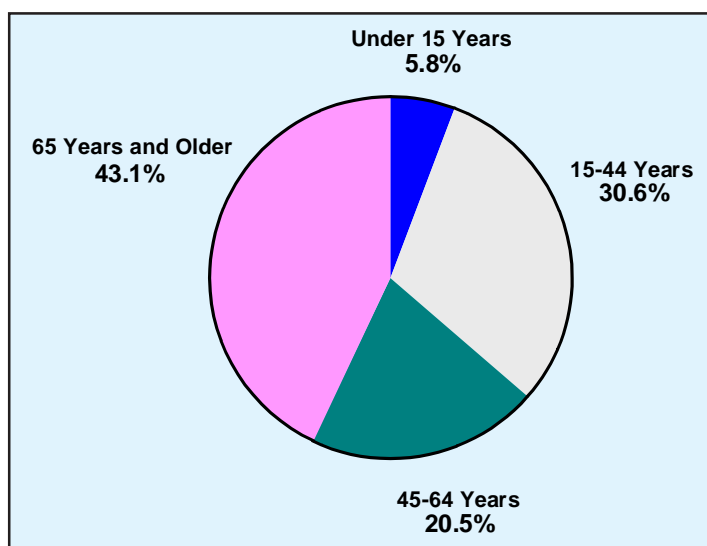


Figure 3. Percent of Total Discharges by Age, Rhode Island, 2000

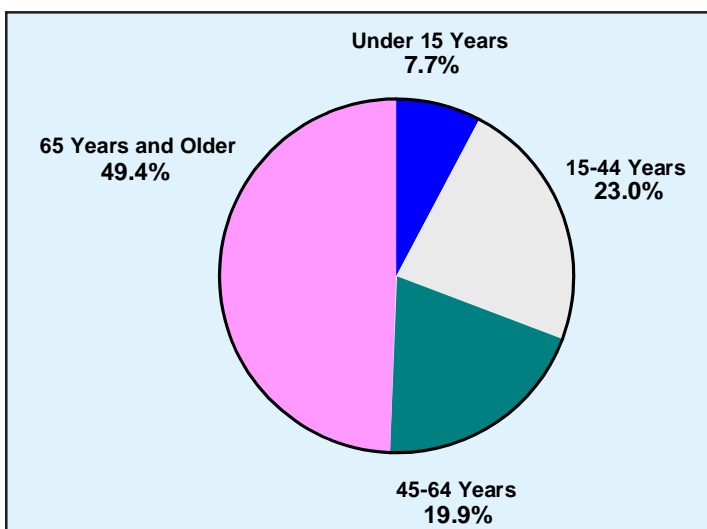


Figure 4. Percent of Total Hospital Utilization (Days) by Age, Rhode Island, 2000

Table 3. Hospital utilization by age groups and gender, Rhode Island, 2000
Discharges of newborn infants are excluded.

Age Group	Discharges	Patient Days ¹	Average Length of Stay ¹
Under 15 Years: All	6,996	50,711	7.2
Female	3,022	18,107	6.0
Male	3,974	32,604	8.2
15-44 Years: All²	37,201	152,139	4.1
Female	26,619	98,008	3.7
Male	10,579	54,090	5.1
45-64 Years: All	24,928	131,663	5.3
Female	12,297	64,903	5.3
Male	12,631	66,760	5.3
65 Years and Older	52,289	326,627	6.2
Female	30,810	191,777	6.2
Male	21,479	134,850	6.3
Age not reported	33	84	2.5
All Ages	121,447	661,224	5.4

Gender	Discharges ¹	Patient Days ¹	Average Length of Stay ¹
Female	72,755	372,819	5.1
Male	48,671	288,346	5.9
Gender not reported	21	59	2.8
Total	121,447	661,224	5.4

¹Patient days and average length of stay are computed after adjusting patients admitted and discharged on the same day to a stay of one day.

²Three cases, ages 15-44, with gender not reported are included. These three cases used a total of 41 days.

Table 4. Hospital utilization rate per 1,000 population¹ by age groups and gender, Rhode Island, 2000

Discharges of newborn infants are excluded.

Age Group	Discharge Rate ²	Utilization Rate (Days) ²
Under 15 Years: All	33.8	244.8
Female	30.0	179.5
Male	37.4	306.8
15-44 Years: All³	81.2	332.3
Female	114.6	422.0
Male	46.9	239.7
45-64 Years: All	108.0	570.3
Female	103.2	544.6
Male	113.1	597.8
65 Years and Older	343.1	2,143.2
Female	333.4	2,075.5
Male	358.0	2,247.4
All Ages⁴	115.8	630.7
Female	133.6	684.5
Male	96.6	572.5

¹Census populations for Rhode Island as of April 1, 2000 were provided by the Bureau of the Census, United States Department of Commerce. (See Appendix 5)

²Rates are not adjusted for patient's state of residence.

³Three cases for which age is known and gender is not reported are included.

⁴Thirty-three cases where age is not reported are included.

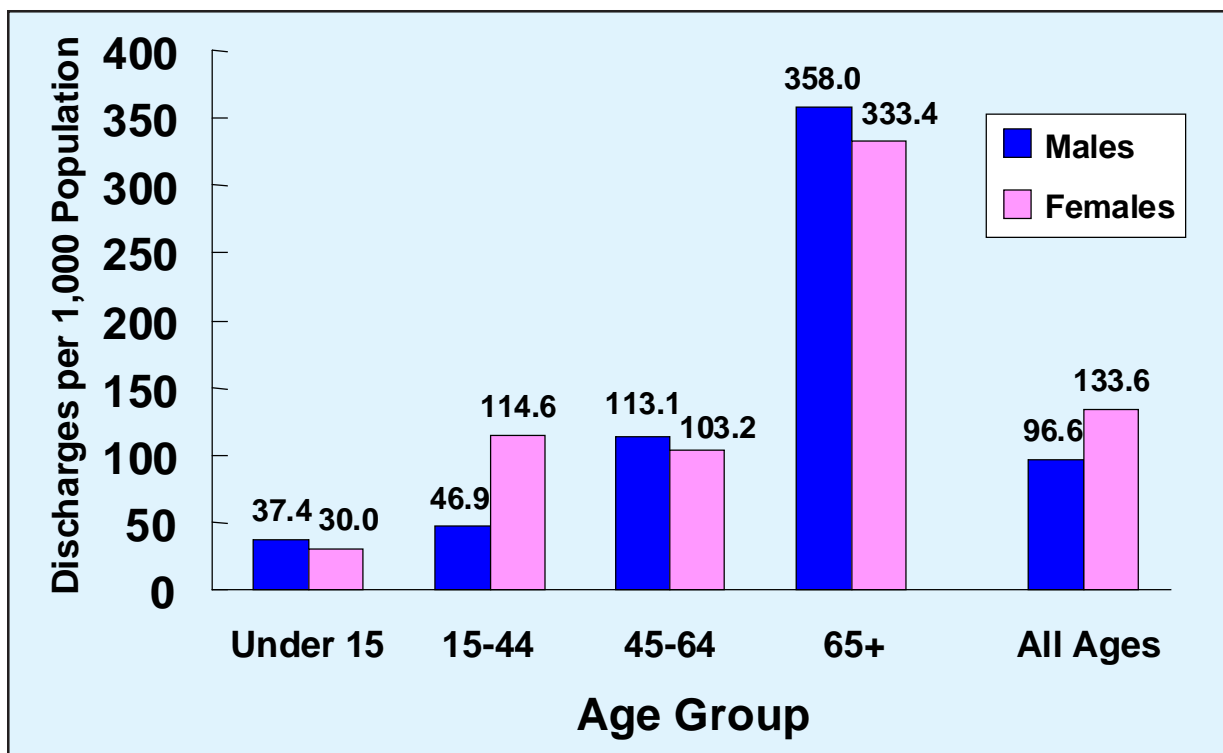


Figure 5. Discharges per 1,000 Population by Age Group and Gender, Rhode Island, 2000

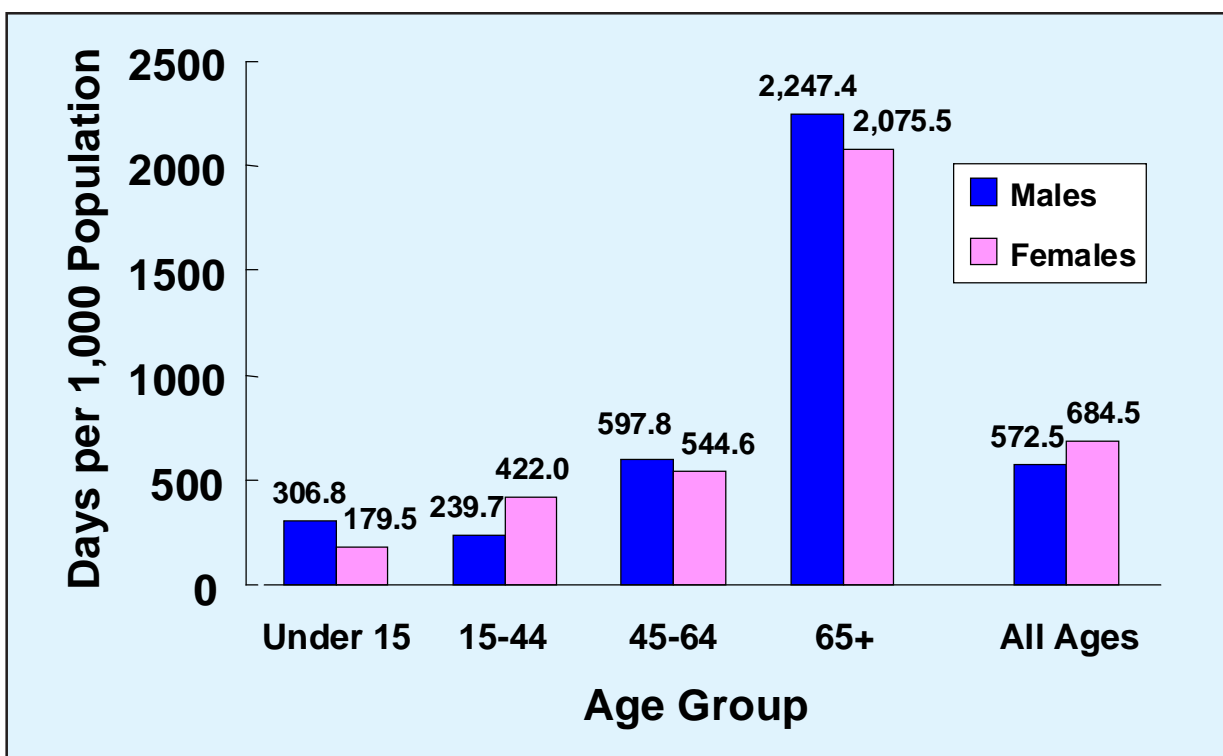


Figure 6. Utilization Rate (Days) per 1,000 Population by Age Group and Gender, Rhode Island, 2000

DISCHARGES BY DIAGNOSIS GROUP

Table 5 presents data regarding the number of discharges from Rhode Island hospitals by gender and first-listed diagnosis. Table 6, a subset of Table 5, shows the leading diagnoses for admission by gender. Table 7 presents the discharge rate per 10,000 population for Rhode Island and the United States by first-listed diagnosis. Finally, Tables 8 and 9 present the average length of stay (ALOS) by the same groups.

Diagnostic codes have been grouped into 18 major categories and 39 specific categories. The specific categories are all sub-classifications of the major diagnostic categories, but are not necessarily inclusive of these groups. Of the total 121,285 discharges with reported primary diagnostic codes, diseases of the circulatory system were most often reported with 21,956 (18.1% of total discharges), while complications of pregnancy, childbirth, and the puerperium were second with 14,221 (11.7%), and mental disorders were third with 12,475 (10.3%). These top three categories accounted for 40.1% of all discharges. The least frequent three diagnostic categories reported; certain conditions originating in the perinatal period (406 discharges), congenital anomalies (493 discharges), and diseases of the blood and blood-forming organs (1,134 discharges), accounted for only 1.7% of all discharges.

Table 6 presents data regarding the leading reasons for hospital admission by first-listed diagnosis and gender. Among the specific categories, heart disease (15,788 discharges), deliveries (12,916 discharges), and psychoses (9,251 discharges), were by far the leading diagnostic categories.

Comparisons of the discharge rate per 10,000 population for Rhode Island and the United States by first-listed diagnosis in Table 7 shows a slight difference between RI (1,156.9), US (1,140.1). The rates for the three leading specific categories locally and nationally varied slightly for heart disease (RI—150.6; US—157.7) and deliveries (RI—123.2; US—134.4). There was significant variation in the comparative rates for psychoses (RI—88.2; US—52.0).

The greatest disparity among the major categories appear in mental disorders (RI—119.0; US—77.2), and symptoms, signs, and ill-defined conditions (RI—61.8; US—9.6). The difference seen in the latter category may be due to differences in medical record coding practices between the two systems.

Table 8 shows that the average length of stay (ALOS) for all discharges was 5.4 days. Among the 18 major diagnostic categories, ALOS varied from a low of 2.8 for symptoms, signs, and ill-defined conditions to a high of 10.9 for supplementary classifications. For minor categories, the shortest ALOS, 2.0 days, was for chronic disease of tonsils and adenoids, and the longest ALOS, 9.6 days, was for malignant neoplasms of the large intestine and rectum.

The ALOS for all discharges was 5.9 days for males and 5.1 for females. Except for two major diagnostic categories, there were no substantial differences in ALOS by gender. The male ALOS for diseases of the blood and blood-forming organs was 8.9 days compared to 5.1 days for females, and the ALOS for benign neoplasms was 5.6 days for males and 3.6 days for females.

Table 9 compares the ALOS by first-listed diagnosis for Rhode Island and the US. For all conditions, the ALOS was 5.4 days for Rhode Island and 4.9 days for the US. Among the 18 major diagnostic categories, the Rhode Island ALOS was most often slightly higher than that of the US. The ALOS variation was wider for diseases of the blood and blood-forming organs (RI—6.8; US—4.4), and diseases of the nervous system and sense organs (RI—6.6; US—4.8). Rhode Island ALOS was significantly shorter for certain conditions originating in the perinatal period (RI—8.4; US—10.1). For minor categories, Rhode Island ALOS was similar to that of the US, with the exception of alcohol dependence syndrome (RI—2.9; US—5.7).

Table 5. Number of discharges by gender and first-listed diagnosis, Rhode Island, 2000

Discharges of newborn infants are excluded.

First-Listed Diagnosis¹	Total	Female	Male
All conditions ²	121,285	72,696	48,589
Infectious and parasitic diseases	2,775	1,482	1,293
Septicemia	1,227	701	526
Neoplasms	7,167	4,360	2,807
Malignant neoplasms	5,591	3,046	2,545
Malignant neoplasm of large intestine and rectum	734	367	367
Malignant neoplasm of trachea, bronchus, and lung	730	339	391
Malignant neoplasm of the breast	419	416	3
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature	1,576	1,314	262
Endocrine, nutritional, and metabolic diseases and immunity disorders	3,906	2,268	1,638
Diabetes mellitus	1,564	769	795
Volume depletion	1,383	869	514
Diseases of the blood and blood-forming organs	1,134	632	502
Mental disorders	12,475	6,433	6,042
Psychoses	9,251	5,020	4,231
Alcohol dependence syndrome	676	209	467
Diseases of the nervous system and sense organs	1,628	946	682
Diseases of the central nervous system	1,118	652	466
Diseases of the ear and mastoid process	205	122	83
Diseases of the circulatory system	21,956	10,907	11,049
Heart disease	15,788	7,646	8,142
Acute myocardial infarction	3,264	1,386	1,878
Coronary atherosclerosis	4,018	1,574	2,444
Other ischemic heart disease	512	266	246
Cardiac dysrhythmias	2,249	1,149	1,100
Congestive heart failure	4,056	2,359	1,697
Cerebrovascular disease	3,584	1,948	1,636
Diseases of the respiratory system	12,209	6,612	5,597
Acute respiratory infections	1,012	495	517
Chronic disease of tonsils and adenoids	20	5	15
Pneumonia	4,777	2,510	2,267
Asthma	1,215	756	459
Diseases of the digestive system	11,147	6,184	4,963

Table 5 (Continued)**Table 5. Number of discharges by gender and first-listed diagnosis, Rhode Island, 2000**

Discharges of newborn infants are excluded.

First-Listed Diagnosis ¹	Total	Female	Male
Ulcers of the stomach and small intestine	665	320	345
Appendicitis	986	401	585
Inguinal hernia	124	22	102
Noninfectious enteritis and colitis	909	585	324
Cholelithiasis	1,127	772	355
Diseases of the genitourinary system	5,973	3,907	2,066
Calculus of kidney and ureter	610	272	338
Hyperplasia of prostate	383	0	383
Complications of pregnancy, childbirth, and the puerperium	14,221	14,221	0
Abortions and ectopic and molar pregnancies	139	139	0
Deliveries	12,916	12,916	0
Diseases of the skin and subcutaneous tissue	2,129	1,101	1,028
Cellulitis and abscess	1,672	835	837
Diseases of the musculoskeletal system and connective tissue	5,688	3,162	2,526
Arthropathies and related disorders	2,136	1,299	837
Intervertebral disc disorders	1,443	650	793
Congenital anomalies	493	223	270
Certain conditions originating in the perinatal period	406	184	222
Symptoms, signs, and ill-defined conditions	6,480	3,719	2,761
Injury and poisoning	8,972	4,922	4,050
Fractures, all sites	3,786	2,397	1,389
Fracture of neck of femur	1,401	1,066	335
Intracranial injuries (excluding those with skull fractures)	376	147	229
Lacerations and open wounds	298	85	213
Supplementary classifications	2,526	1,433	1,093

¹Diagnosis groups are defined in Appendix 1.²There are 162 cases missing a primary diagnosis code.

Table 6. Leading reasons for hospital admission, by gender and first-listed diagnosis, Rhode Island, 2000

Discharges of newborn infants are excluded.

First-Listed Diagnosis¹	All Patients
Heart disease	15,788
Deliveries	12,916
Psychoses	9,251
Malignant neoplasms	5,591
Pneumonia	4,777

First-Listed Diagnosis¹	Male
Heart disease	8,142
Psychoses	4,231
Malignant neoplasms	2,545
Pneumonia	2,267
Cerebrovascular disease	1,636

First-Listed Diagnosis¹	Female
Deliveries	12,916
Heart disease	7,646
Psychoses	5,020
Malignant neoplasms	3,046
Pneumonia	2,510

¹*Diagnosis groups are defined in Appendix 1.*

Table 7. Hospital discharge rate per 10,000 population¹ by first-listed diagnosis, Rhode Island, 2000

Discharges of newborn infants are excluded.

First-Listed Diagnosis²	RI Rate³	US Rate⁴
All conditions ⁵	1,156.9	1,140.1
Infectious and parasitic diseases	26.5	28.3
Septicemia	11.7	11.7
Neoplasms	68.4	57.1
Malignant neoplasms	53.3	41.6
Malignant neoplasm of large intestine and rectum	7.0	5.7
Malignant neoplasm of trachea, bronchus, and lung	7.0	5.0
Malignant neoplasm of breast	4.0	3.9
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature ⁶	15.0	14.0
Endocrine, nutritional, and metabolic diseases and immunity disorders	37.3	52.3
Diabetes mellitus	14.9	20.0
Volume depletion	13.2	17.4
Diseases of the blood and blood-forming organs	10.8	14.1
Mental disorders	119.0	77.2
Psychoses	88.2	52.0
Alcohol dependence syndrome	6.4	5.3
Diseases of the nervous system and sense organs	15.5	16.9
Diseases of the central nervous system	10.7	No US ⁷
Diseases of the ear and mastoid process	2.0	No US ⁷
Diseases of the circulatory system	209.4	226.3
Heart disease	150.6	157.7
Acute myocardial infarction	31.1	28.1
Coronary atherosclerosis	38.3	39.6
Other ischemic heart disease	4.9	10.2
Cardiac dysrhythmias	21.5	25.7
Congestive heart failure	38.7	35.9
Cerebrovascular disease	34.2	35.3
Diseases of the respiratory system	116.5	123.8
Acute respiratory infections ⁸	9.7	10.3
Chronic disease of tonsils and adenoids	0.2	No US ⁷
Pneumonia	45.6	46.1
Asthma	11.6	16.7
Diseases of the digestive system	106.3	113.0
Ulcers of the stomach and small intestine	6.3	No US ⁷
Appendicitis	9.4	9.8
Inguinal hernia	1.2	No US ⁷

Table 7 (Continued)**Table 7. Hospital discharge rate per 10,000 population¹ by first-listed diagnosis, Rhode Island, 2000**

Discharges of newborn infants are excluded.

First-Listed Diagnosis ²	RI Rate ³	US Rate ⁴
Noninfectious enteritis and colitis	8.7	10.0
Cholelithiasis	10.8	12.4
Diseases of the genitourinary system	57.0	62.7
Calculus of kidney and ureter	5.8	6.3
Hyperplasia of prostate	3.7	No US ⁷
Complications of pregnancy, childbirth, and the puerperium ⁹	135.7	152.5
Abortions and ectopic and molar pregnancies	1.3	No US ⁷
Deliveries	123.2	134.4
Diseases of the skin and subcutaneous tissue	20.3	18.5
Cellulitis and abscess	15.9	12.7
Diseases of the musculoskeletal system and connective tissue	54.3	55.0
Arthropathies and related disorders ¹⁰	20.4	15.9
Intervertebral disc disorders	13.8	11.8
Congenital anomalies	4.7	5.9
Certain conditions originating in the perinatal period	3.9	5.6
Symptoms, signs, and ill-defined conditions	61.8	9.6
Injury and poisoning	85.6	88.7
Fractures, all sites	36.1	35.3
Fracture of neck of femur	13.4	11.6
Intracranial injuries (excluding those with skull fractures)	3.6	No US ⁷
Lacerations and open wounds	2.8	No US ⁷
Supplementary classifications ⁹	24.1	32.4

¹Census populations for Rhode Island as of April 1, 2000, were provided by the Bureau of the Census, United States Department of Commerce. (See Appendix 5)

²Diagnosis groups are defined in Appendix 1.

³Rates are not adjusted for patient's state of residence.

⁴Source for the United States rates: Hall, Margaret J. and Owings, Maria F. 2000 National Hospital Discharge Survey. Advance Data From Vital and Health Statistics; No. 329. Hyattsville, Maryland: National Center for Health Statistics, 2002. <http://www.cdc.gov/nchs/data/ad/ad329.pdf>

⁵There are 162 cases missing a primary diagnosis code. When those cases are included, the total discharge rate is 1,158.5 per 10,000 population for Rhode Island.

⁶US limited to benign neoplasms.

⁷"No US" indicates data not reported in United States data.

⁸US limited to acute bronchitis and bronchiolitis.

⁹US rate calculated by the Rhode Island Department of Health using data in US report.

¹⁰US limited to osteoarthritis and allied disorders.

Table 8. Average length of stay¹ by gender and first-listed diagnosis, Rhode Island, 2000

Discharges of newborn infants are excluded.

First-Listed Diagnosis ²	Total	Female	Male
All conditions ³	5.4	5.1	5.9
Infectious and parasitic diseases	6.6	6.6	6.5
Septicemia	8.8	8.7	8.9
Neoplasms	6.7	6.2	7.6
Malignant neoplasms	7.5	7.3	7.8
Malignant neoplasm of large intestine and rectum	9.6	9.7	9.5
Malignant neoplasm of trachea, bronchus, and lung	8.1	8.2	8.0
Malignant neoplasm of breast	2.4	2.4	4.3
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature	3.9	3.6	5.6
Endocrine, nutritional, and metabolic diseases and immunity disorders	5.2	5.0	5.4
Diabetes mellitus	6.1	5.9	6.3
Volume depletion	3.9	4.0	3.7
Diseases of the blood and blood-forming organs	6.8	5.1	8.9
Mental disorders	7.5	7.4	7.6
Psychoses	7.4	7.6	7.2
Alcohol dependence syndrome	2.9	3.1	2.9
Diseases of the nervous system and sense organs	6.6	6.3	6.9
Diseases of the central nervous system	7.2	7.1	7.5
Diseases of the ear and mastoid process	2.8	2.8	2.7
Diseases of the circulatory system	5.2	5.3	5.1
Heart disease	4.9	5.0	4.7
Acute myocardial infarction	5.6	6.0	5.3
Coronary atherosclerosis	3.9	3.9	3.8
Other ischemic heart disease	2.4	2.7	2.1
Cardiac dysrhythmias	3.8	3.8	3.8
Congestive heart failure	5.5	5.5	5.5
Cerebrovascular disease	5.6	5.8	5.4
Diseases of the respiratory system	6.0	6.1	6.0
Acute respiratory infections	3.3	3.3	3.3
Chronic disease of tonsils and adenoids	2.0	2.4	1.8
Pneumonia	6.2	6.3	6.1
Asthma	3.0	3.3	2.6
Diseases of the digestive system	5.3	5.5	5.1
Ulcers of the stomach and small intestine	6.0	6.2	5.8

Table 8 (Continued)**Table 8. Average length of stay¹ by gender and first-listed diagnosis, Rhode Island, 2000**

Discharges of newborn infants are excluded.

First-Listed Diagnosis ²	Total	Female	Male
Cholelithiasis	5.2	5.1	5.2
Diseases of the genitourinary system	4.1	3.8	4.5
Calculus of kidney and ureter	2.6	2.8	2.4
Hyperplasia of prostate	2.9	0.0	2.9
Complications of pregnancy, childbirth, and the puerperium	3.0	3.0	0.0
Abortions and ectopic and molar pregnancies	2.2	2.2	0.0
Deliveries	2.9	2.9	0.0
Diseases of the skin and subcutaneous tissue	5.4	5.4	5.4
Cellulitis and abscess	4.9	5.0	4.8
Diseases of the musculoskeletal system and connective tissue	4.2	4.3	4.0
Arthropathies and related disorders	4.6	4.6	4.7
Intervertebral disc disorders	2.2	2.4	2.1
Congenital anomalies	5.4	5.3	5.5
Certain conditions originating in the perinatal period	8.4	8.7	8.1
Symptoms, signs, and ill-defined conditions	2.8	2.9	2.7
Injury and poisoning	5.8	5.6	6.0
Fractures, all sites	5.9	5.7	6.2
Fracture of neck of femur	6.8	6.5	7.9
Intracranial injuries (excluding those with skull fractures)	7.9	7.0	8.5
Lacerations and open wounds	3.2	3.5	3.0
Supplementary classifications	10.9	10.4	11.6

¹Average length of stay is computed after adjusting patients admitted and discharged on the same day to a stay of one day.

²Diagnosis groups are defined in Appendix 1.

³There are 21 cases without gender reported included in the total. These 21 cases had an ALOS of 2.8 days.

Table 9. Average length of stay¹ by first-listed diagnosis, Rhode Island, 2000

Discharges of newborn infants are excluded.

First-Listed Diagnosis ²	Total RI	Total US ³
All conditions ⁴	5.4	4.9
Infectious and parasitic diseases	6.6	6.3
Septicemia	8.8	8.0
Neoplasms	6.7	5.8
Malignant neoplasms	7.5	6.7
Malignant neoplasm of large intestine and rectum	9.6	8.6
Malignant neoplasm of trachea, bronchus, and lung	8.1	6.7
Malignant neoplasm of breast	2.4	2.9
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature ⁵	3.9	3.2
Endocrine, nutritional, and metabolic diseases and immunity disorders	5.2	4.5
Diabetes mellitus	6.1	5.2
Volume depletion	3.9	4.0
Diseases of the blood and blood-forming organs	6.8	4.4
Mental disorders	7.5	7.3
Psychoses	7.4	8.1
Alcohol dependence syndrome	2.9	5.7
Diseases of the nervous system and sense organs	6.6	4.8
Diseases of the central nervous system	7.2	No US ⁶
Diseases of the ear and mastoid process	2.8	No US ⁶
Diseases of the circulatory system	5.2	4.8
Heart disease	4.9	4.7
Acute myocardial infarction	5.6	5.7
Coronary atherosclerosis	3.9	3.9
Other ischemic heart disease	2.4	2.7
Cardiac dysrhythmias	3.8	3.7
Congestive heart failure	5.5	5.5
Cerebrovascular disease	5.6	5.4
Diseases of the respiratory system	6.0	5.4
Acute respiratory infections ⁷	3.3	3.4
Chronic disease of tonsils and adenoids	2.0	No US ⁶
Pneumonia	6.2	5.9
Asthma	3.0	3.0
Diseases of the digestive system	5.3	4.7
Ulcers of the stomach and small intestine	6.0	No US ⁶

Table 9 (Continued)**Table 9. Average length of stay¹ by first-listed diagnosis, Rhode Island, 2000**

Discharges of newborn infants are excluded.

First-Listed Diagnosis ²	Total RI	Total US ³
Appendicitis	3.4	3.3
Inguinal hernia	4.4	No US ⁶
Noninfectious enteritis and colitis	6.1	4.6
Cholelithiasis	5.2	3.8
Diseases of the genitourinary system	4.1	3.8
Calculus of kidney and ureter	2.6	2.4
Hyperplasia of prostate	2.9	No US ⁶
Complications of pregnancy, childbirth, and the puerperium ⁸	3.0	2.5
Abortions and ectopic and molar pregnancies	2.2	No US ⁶
Deliveries	2.9	2.5
Diseases of the skin and subcutaneous tissue	5.4	5.5
Cellulitis and abscess	4.9	5.3
Diseases of the musculoskeletal system and connective tissue	4.2	4.1
Arthropathies and related disorders ⁹	4.6	4.5
Intervertebral disc disorders	2.2	3.0
Congenital anomalies	5.4	5.7
Certain conditions originating in the perinatal period	8.4	10.1
Symptoms, signs, and ill-defined conditions	2.8	2.4
Injury and poisoning	5.8	5.4
Fractures, all sites	5.9	5.8
Fracture of neck of femur	6.8	7.0
Intracranial injuries (excluding those with skull fractures)	7.9	No US ⁶
Lacerations and open wounds	3.2	No US ⁶
Supplementary classifications ⁸	10.9	9.7

¹Average length of stay is computed after adjusting patients admitted and discharged on the same day to a stay of one day.

²Diagnosis groups are defined in Appendix 1.

³Source for the United States rates: Hall, Margaret J. and Owings, Maria F. 2000 National Hospital discharge Survey. Advance Data From Vital and Health Statistics; No. 329. Hyattsville, Maryland: National Center for Health Statistics, 2002. <http://www.cdc.gov/nchs/data/ad/ad329.pdf>

⁴There are 21 cases without gender reported included in the total. These 21 cases had an ALOS of 2.8 days.

⁵US limited to benign neoplasms.

⁶"No US" indicates data not reported in United States data.

⁷US limited to acute bronchitis and bronchiolitis.

⁸US length of stay calculated by the Rhode Island Department of Health using data in US report.

⁹US limited to osteoarthritis and allied disorders.

UTILIZATION OF SURGICAL AND DIAGNOSTIC PROCEDURES

Table 10 presents data for procedures reported as being performed during inpatient stays in Rhode Island short-stay hospitals by gender and procedure group.³ Table 11 shows the most frequent procedures performed during in-patient admissions by gender and minor procedure category.

Procedures are grouped into 16 major procedure groups and 44 specific categories. The specific categories are all sub-classifications of the major groups, but do not represent a complete sub-division of the major groups in all cases.

Of 121,447 discharges, 73,170 patients, or 60.3%, underwent at least one procedure. The total number of procedures reported was 167,713. Non-surgical procedures, including computerized axial tomography, pyelogram, arteriography and angiocardiology using contrast material, diagnostic ultrasound, circulatory monitoring, radioisotope scan, respiratory therapy, and others accounted for 55,763 procedures or 33.2% of all procedures. This was the largest single group of procedures performed.

Among the surgical procedures listed, the three most frequently reported major groups were operations on the cardiovascular system (25,414), operations on the digestive system (24,284), and obstetrical procedures (19,735). Together, these accounted for 41.4% of the total. Three procedure categories that were the least reported; operations on the ear (77), operations on the eye (219), and operations on the endocrine system (233), together accounted for only 0.3% of all procedures.

Table 11 shows that among the more specific procedure categories, the three most common procedures were from diverse areas—arteriography and angiocardiology (11,203), repair of current obstetric laceration (5,578), and cardiac catheterization (4,488). By far the leading overall category for males was arteriography and angiocardiology using contrast material. The leading female categories included three gender-specific procedures.

Comparison of the procedure rates for Rhode Island and the United States was not possible, as the data are not collected comparably. Rhode Island collects up to 10 procedures per discharge, while the United States only collects up to 4 procedures per discharge.

³*Up to ten procedures may be reported per discharge, as all reported procedures are included, the information presented is described as “all-listed procedures.”*

Table 10. Number of all-listed procedures for discharges from short-stay hospitals, by gender and procedure category, Rhode Island, 2000

Discharges of newborn infants are excluded.

Procedures¹	Total	Male	Female
All procedures ²	167,713	70,755	96,958
Operations on the nervous system	4,505	2,310	2,195
Spinal tap	1,455	733	722
Operations on the endocrine system	233	87	146
Operations on the eye	219	84	135
Operations on the ear	77	46	31
Operations on the nose, mouth, and pharynx	745	434	311
Tonsillectomy with or without adenoidectomy	30	23	7
Operations on the respiratory system	4,893	2,609	2,284
Bronchoscopy with or without biopsy	1,141	616	525
Operations on the cardiovascular system	25,414	14,794	10,620
Removal of coronary artery obstruction and insertion of stent(s)	4,269	2,890	1,379
Coronary artery bypass graft	2,195	1,492	703
Cardiac catheterization	4,488	2,779	1,709
Insertion, replacement, removal, and revision of pacemaker leads or device	1,386	689	697
Shunt or vascular bypass	690	414	276
Hemodialysis	2,419	1,197	1,222
Operations on the hemic and lymphatic system	1,664	777	887
Operations on the digestive system	24,284	10,415	13,869
Endoscopy of small intestine with or without biopsy	3,904	1,813	2,091
Endoscopy of large intestine with or without biopsy	2,575	1,002	1,573
Partial excision of large intestine	1,248	576	672
Appendectomy, excluding incidental	1,125	611	514
Cholecystectomy	1,494	517	977
Repair of inguinal hernia	176	140	36
Lysis of peritoneal adhesions	1,636	355	1,281
Operations on the urinary system	4,410	1,866	2,544
Cystoscopy with or without biopsy	1,028	346	682
Operations in the male genital organs	1,008	1,007	1
Prostatectomy	761	761	0
Operations on the female genital organs	6,831	0	6,831
Oophorectomy and salpingo-oophorectomy	1,621	0	1,621
Bilateral destruction or occlusion of fallopian tubes	1,016	0	1,016

Table 10 (Continued)

Table 10. Number of all-listed procedures for discharges from short-stay hospitals, by gender and procedure category, Rhode Island, 2000

Discharges of newborn infants are excluded.

Procedures ¹	Total	Male	Female
Hysterectomy	1,969	0	1,969
Dilation and curettage of uterus	99	0	99
Repair of cystocele and rectocele	592	0	592
Obstetrical procedures	19,735	0	19,735
Episiotomy with or without forceps or vacuum extraction	2,643	0	2,643
Artificial rupture of membranes	1,649	0	1,649
Cesarean section	2,862	0	2,862
Fetal EKG (scalp) and monitoring, not otherwise specified	948	0	948
Repair of current obstetric laceration	5,578	0	5,578
Operations on the musculoskeletal system	11,858	5,665	6,193
Partial excision of bone	634	333	301
Open reduction of fracture with internal fixation	1,784	682	1,102
Excision or destruction of intervertebral disc	1,235	706	529
Total hip replacement	672	263	409
Total knee replacement	949	365	584
Operations on the integumentary system	6,074	2,763	3,311
Mastectomy	316	2	314
Debridement of wound, infection, or burn	1,808	1,032	776
Skin graft	382	214	168
Miscellaneous diagnostic and therapeutic procedures	55,763	27,898	27,865
Computerized axial tomography	1,226	626	600
Pyelogram	558	270	288
Arteriography and angiocardiology using contrast material	11,203	6,801	4,402
Diagnostic ultrasound	4,053	1,921	2,102
Circulatory monitoring	935	486	449
Radioisotope scan	474	215	259
Respiratory therapy	4,257	2,183	2,074
Other miscellaneous procedures	33,057	15,366	17,691

¹Procedure categories are defined in Appendix 2.

²Up to 10 procedures may be listed per discharge.

Table 11. Most common procedures by gender and procedure category, Rhode Island, 2000

Discharges of newborn infants are excluded.

Procedures¹	All Patients
Arteriography and angiocardiology using contrast material	11,203
Repair of current obstetric laceration	5,578
Cardiac catheterization	4,488
Removal of coronary artery obstruction and insertion of stent(s)	4,269
Respiratory therapy	4,257

Procedures¹	Male
Arteriography and angiocardiology using contrast material	6,801
Removal of coronary artery obstruction and insertion of stent(s)	2,890
Cardiac catheterization	2,779
Respiratory therapy	2,183
Diagnostic ultrasound	1,921

Procedures¹	Female
Repair of current obstetric laceration	5,578
Arteriography and angiocardiology using contrast material	4,402
Cesarean section	2,862
Episiotomy with or without forceps or vacuum extraction	2,643
Diagnostic ultrasound	2,102

¹Procedure categories are defined in Appendix 2.

DISCHARGES BY GROUPED CHARGES

Table 12 and Figure 7 present data regarding short-stay hospital discharges and percent distribution grouped by charge category. Charge categories were set by increments of \$1,000 up to \$10,000, of \$5,000 up to \$20,000, and progressively larger increments as the charges became greater.

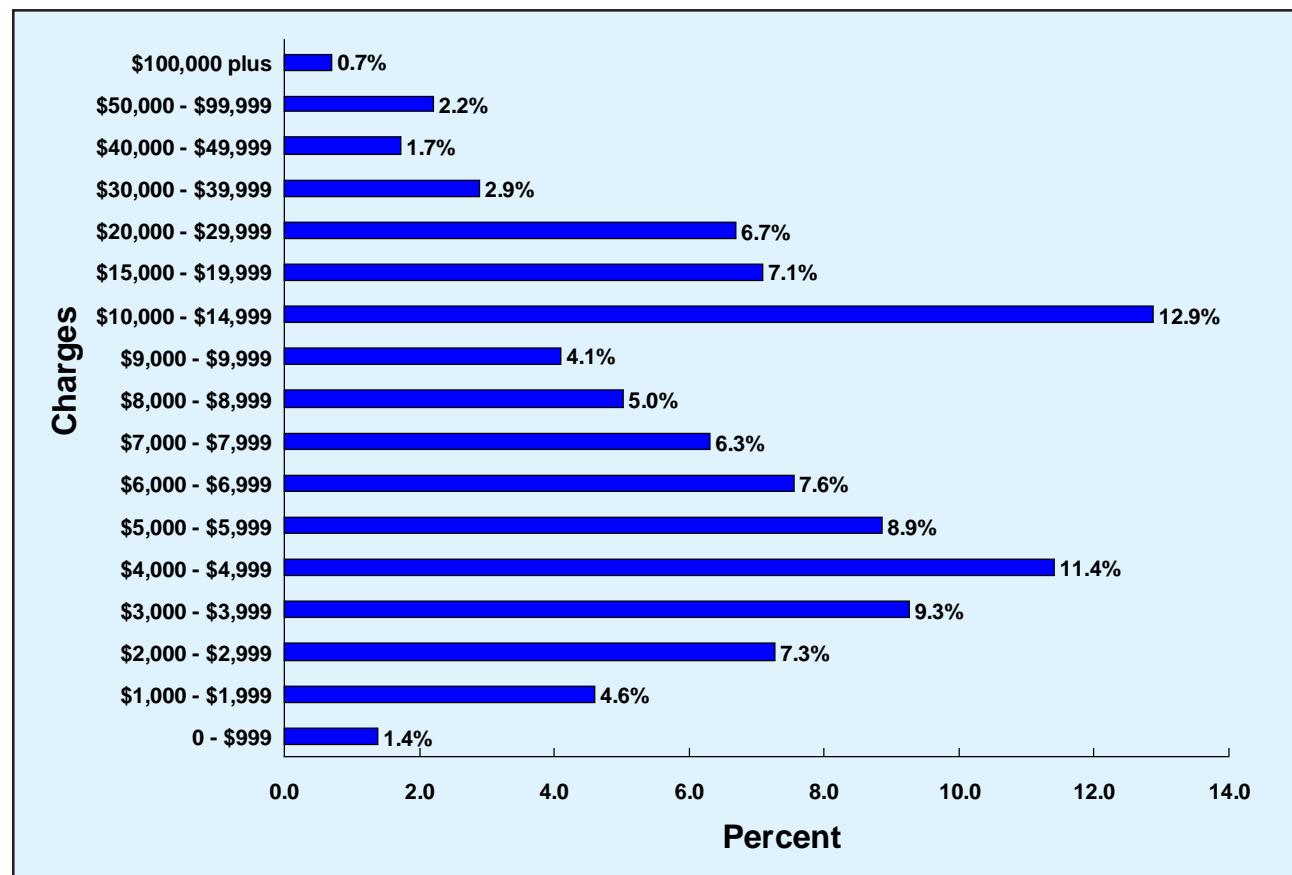


Figure 7. Hospital Discharges and Percent Distribution Grouped by Charge Category, Rhode Island, 2000

Although the all-hospital average charge per discharge was \$12,236 (Table 2), 65.8% of all discharges had a charge of less than \$10,000. The median charge was \$6,949. The most common categories were \$10,000 - \$14,999 (12.9%), and \$4,000 - \$4,999 (11.4%). The \$100,000 plus category had only 0.7%, while 7.7% of all discharges had charges over \$30,000.

These averages are not adjusted for the different complexity of the hospitals' case-mix. Actual reimbursement to the hospitals per discharge will generally be lower than average charges, depending on the specific arrangements under which payers reimburse hospitals. Data on actual payments to the hospitals are not available in the discharge data, but may be found in reports on aggregate hospital financial performance, *Hospital Financial Operations Dataset 2001*, available at <http://www.health.ri.gov/chic/performance/HOSPITAL-DATASE.xls>.

Table 12. Discharges and percent distribution grouped by charge category, Rhode Island, 2000
Discharges of newborn infants are excluded.

Grouped Charges	Discharges	Percent
0 - \$999	1,693	1.4%
\$1,000 - \$1,999	5,545	4.6%
\$2,000 - \$2,999	8,906	7.3%
\$3,000 - \$3,999	11,280	9.3%
\$4,000 - \$4,999	13,796	11.4%
\$5,000 - \$5,999	10,785	8.9%
\$6,000 - \$6,999	9,184	7.6%
\$7,000 - \$7,999	7,661	6.3%
\$8,000 - \$8,999	6,076	5.0%
\$9,000 - \$9,999	4,976	4.1%
\$10,000 - \$14,999	15,600	12.9%
\$15,000 - \$19,999	8,578	7.1%
\$20,000 - \$29,999	8,096	6.7%
\$30,000 - \$39,999	3,572	2.9%
\$40,000 - \$49,999	2,077	1.7%
\$50,000 - \$99,999	2,719	2.2%
\$100,000 plus	903	0.7%
Total	121,447	100.0%

OBSTETRICAL UTILIZATION

Table 13 presents Rhode Island short-stay hospital obstetrical utilization data by hospital, including total deliveries, sub-divided by vaginal delivery (total and after previous cesarean delivery), and cesarean delivery (total, primary, and after previous cesarean delivery). Also included are cesarean delivery rates (total and primary), and the rate of vaginal delivery after previous cesarean delivery. (Figure 8 and Figure 9) [See Appendix 3 for definitions]

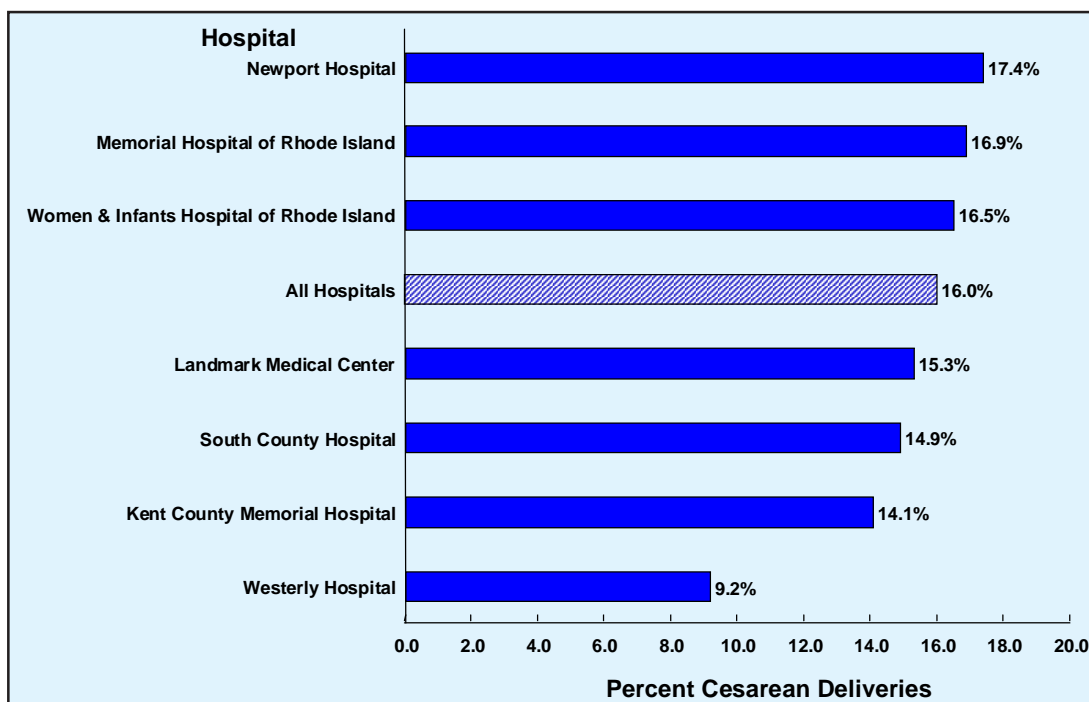


Figure 8. Primary Cesarean Delivery Rate by Hospital, Rhode Island, 2000

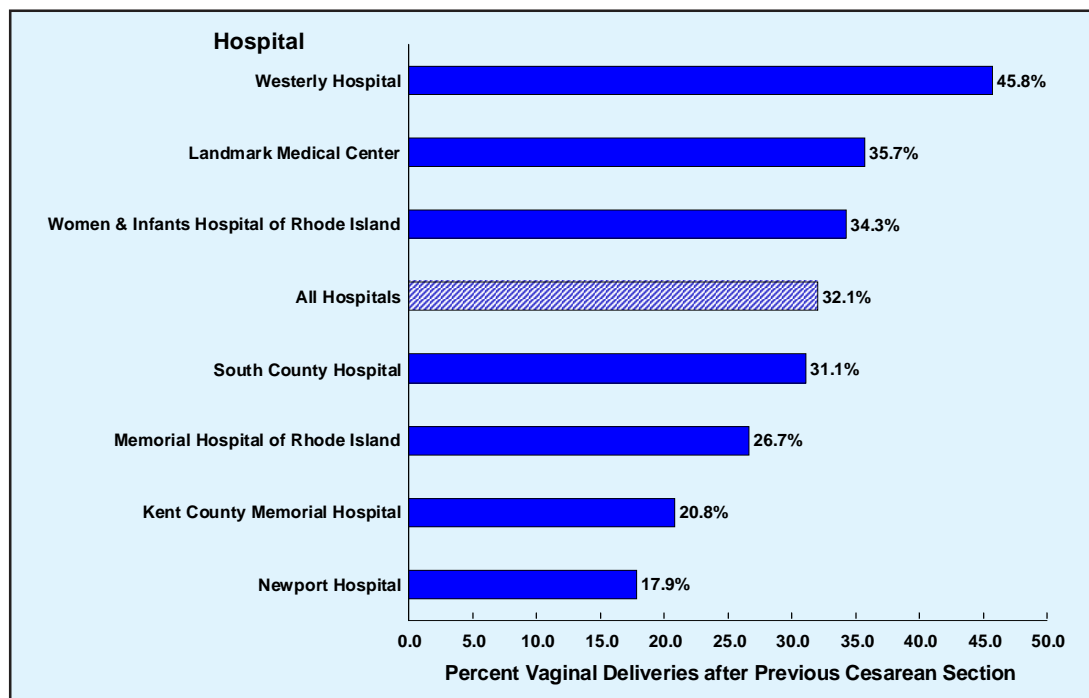


Figure 9. Vaginal Delivery Rate after Previous Cesarean Section by Hospital, Rhode Island, 2000

In 2000, there were 12,915 deliveries at the state's seven hospitals with maternity services and one delivery at Rhode Island Hospital. The number of deliveries by hospital ranged from 8,723 at the Women and Infants Hospital of Rhode Island (67.5% of all deliveries) down to 450 at Westerly Hospital.

The all-hospital total cesarean delivery rate was 22.1%, ranging by hospital from 15.1% to 25.4%. The all-hospital primary cesarean delivery rate was 16.0%, and ranged from 9.2% to 17.4%. Of the 1,519 deliveries to women with previous cesarean sections, 487 (32.1%) were vaginal deliveries.

The highest rate of vaginal deliveries after previous cesarean deliveries was attributable to Westerly Hospital (45.8%) where the smallest number (59) of women with previous cesareans delivered. While the all-hospital rate for vaginal deliveries after previous cesarean was 32.1%, the range among hospitals from 17.9% to 45.8% was wide; however, these statistics are based on a relatively small number of cases for some hospitals.

Table 14 presents short-stay hospital average length of stay by type of delivery, i.e. vaginal and cesarean. The all-hospital average length of stay for vaginal deliveries was 2.4 days compared to 4.8 days for cesarean deliveries. By hospital, vaginal deliveries ranged from 2.0 days to 2.5 days, while cesarean ranged from 3.4 days to 5.2 days.

Table 13. Hospital obstetrical utilization, Rhode Island, 2000

Hospital	Total Deliveries	Method of Delivery ¹						Cesarean Delivery Rate ¹		Rate of Vaginal Deliveries After Previous Cesarean ¹
		Vaginal			Cesarean					
		Total	Simple Vaginal	After Previous Cesarean	Total	Primary	After Previous Cesarean	Total	Primary	
Newport Hospital	681	508	493	15	173	104	69	25.4%	17.4%	17.9%
Memorial Hospital of Rhode Island	754	584	564	20	170	115	55	22.5%	16.9%	26.7%
South County Hospital	558	435	412	23	123	72	51	22.0%	14.9%	31.1%
Kent County Memorial Hospital	1,183	923	893	30	260	146	114	22.0%	14.1%	20.8%
Westerly Hospital	450	382	355	27	68	36	32	15.1%	9.2%	45.8%
Landmark Medical Center	566	452	432	20	114	78	36	20.1%	15.3%	35.7%
Women & Infants Hospital of RI	8,723	6,776	6,424	352	1,947	1,272	675	22.3%	16.5%	34.3%
All Hospitals ²	12,916	10,061	9,574	487	2,855	1,823	1,032	22.1%	16.0%	32.1%

¹Definitions appear in Appendix 3.

²Total includes one vaginal delivery at Rhode Island Hospital, a non-obstetrical hospital.

Table 14. Hospital average length of stay¹ by type of delivery, Rhode Island, 2000

Hospital	Type of Delivery ²	
	Vaginal	Cesarean
Newport Hospital	2.2 days	3.8 days
Memorial Hospital of Rhode Island	2.3	3.9
South County Hospital	2.2	4.0
Kent County Memorial Hospital	2.2	3.8
Westerly Hospital	2.0	3.4
Landmark Medical Center	2.2	4.0
Women & Infants Hospital of Rhode Island	2.5	5.2
All Hospitals	2.4 days	4.8 days

¹Average length of stay is computed after adjusting patients admitted and discharged on the same day to a stay of one day.

²Definitions appear in Appendix 3.

DISCHARGES BY EXTERNAL CAUSE OF INJURY

Table 15 presents data regarding short-stay hospital discharges by external cause of injury. In 2000, there were 6,026 discharges where an injury was reported as the first-listed diagnosis on the hospital medical record, excluding nature of injury codes for late effects of injury and complications of surgical and medical care. Note that discharges with external cause of injury codes corresponding to late effects of injury and medical and surgical misadventure do appear in 2000.

Of these injury discharges, 91.6% had an external cause of injury (e.g., motor vehicle crash, fall, assault, etc.) reported. Falls, with 2,975 discharges (49.4% of total injuries), were by far the leading external cause of injury. The only other specific external cause with more than 10% of the total was motor vehicle traffic with 742 (12.3%)

Figure 10 presents data with respect to hospital discharges by external cause of injury by age groups. There are major differences by age groups. Falls represent 74.1% of the total injury cause for hospitalizations for those 65 and over, 42.5% for those ages 45-64, 17.6% for those ages 15-44, and 35.7% for those under age 15. For those ages 15-44, 23.4% of injury related hospitalizations were caused by motor vehicle crashes, the highest proportion among the four age groups.

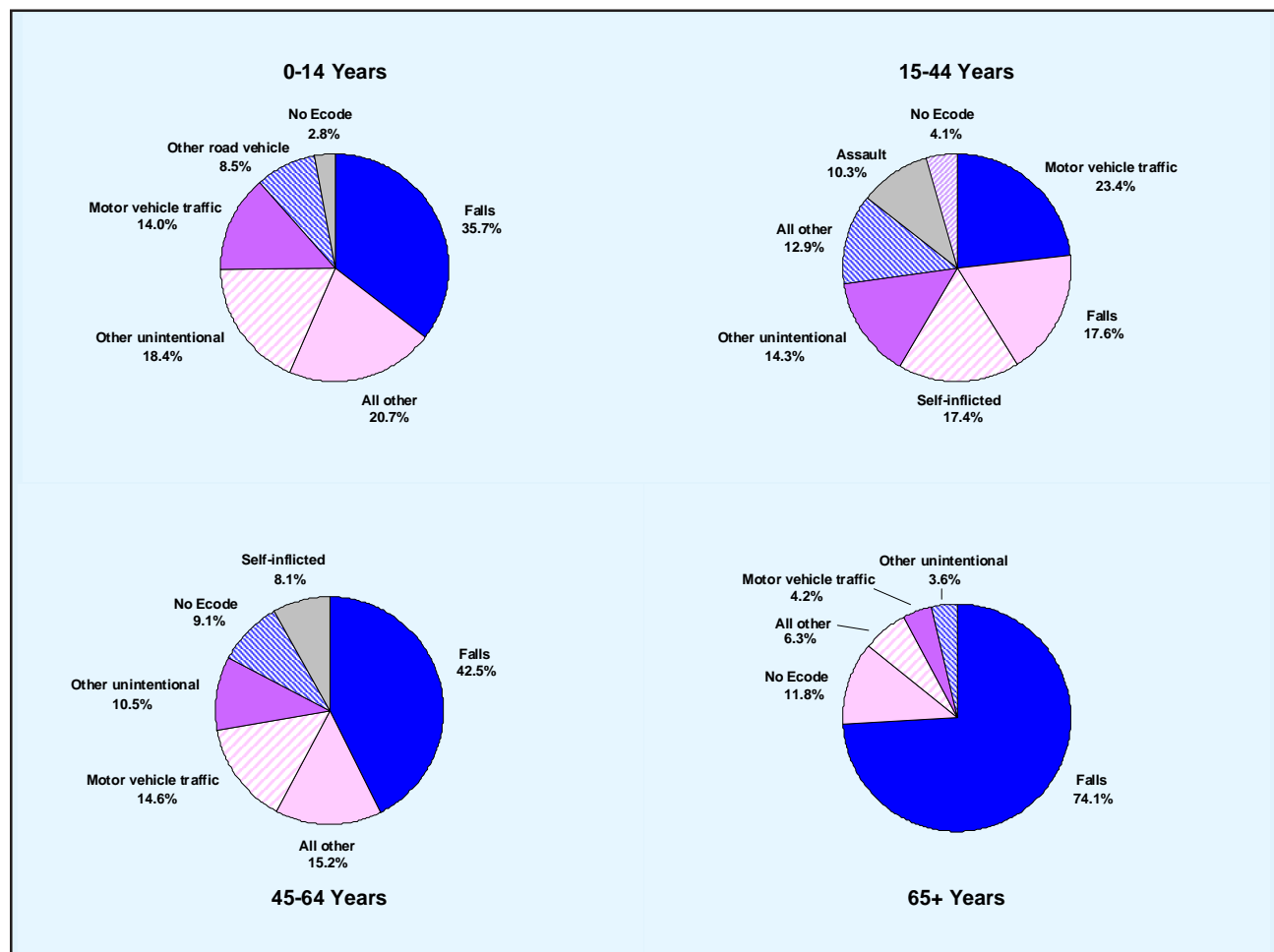


Figure 10. Discharges by External Cause of Injury by Age Group, Rhode Island, 2000

Table 15. Hospital discharges with first-listed diagnosis of injury¹ by external cause of injury, Rhode Island, 2000

External Cause of Injury²	Discharges	Percent
Railway	0	0.0%
Motor vehicle traffic	742	12.3%
Motor vehicle non-traffic	60	1.0%
Other road vehicle	86	1.4%
Water transport	11	0.2%
Air transport	2	0.0%
Other vehicle	5	0.1%
Poisoning	138	2.3%
Medical and surgical misadventure	34	0.6%
Falls	2,975	49.4%
Fire	40	0.7%
Natural and environmental factors	60	1.0%
Submersion and suffocation	48	0.8%
Other unintentional	542	9.0%
Late effects	10	0.2%
Adverse drug reaction	36	0.6%
Self-inflicted	426	7.1%
Assault	225	3.7%
Legal intervention	4	0.1%
Undetermined intent	77	1.3%
War	0	0.0%
External cause of injury not reported	505	8.4%
All injuries	6,026	100.0%

¹Includes discharges with a first-listed diagnosis of ICD-9-CM codes 800-904, 910-994, 995.5, 995.81.

²Definitions of external cause of injury categories appear in Appendix 4.

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1. Hall, Margaret J. and Owings, Maria F. 2000 National Hospital Discharge Survey. Advance Data From Vital and Health Statistics; No. 329. Hyattsville, Maryland: National Center for Health Statistics, 2002. <http://www.cdc.gov/nchs/data/ad/ad329.pdf>
2. Public Health Service and Health Care Financing Administration. International Classification of Diseases, 9th Revision, Clinical Modification, 3rd ed. Washington: Public Health Service, 1989.
3. American Hospital Association: A Guide to United States Hospitals, Health Care Systems, Networks, Alliances, Health Organizations, Agencies, and Providers 2000. Chicago: Health Forum, LLC, 2000.
4. Rules and Regulations for Determination of Need for New Health Care Equipment and New Institutional Health Services (R23-15-CON), State of Rhode Island and Providence Plantations, Department of Health, June 1979, January 2, 2000.

Appendix 1: Diagnostic groupings and code numbers based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*¹

Diagnostic groupings²	Code numbers
Infectious and parasitic diseases	001-139
Septicemia	038
Neoplasms	140-239
Malignant neoplasms	140-208, 230-234
Malignant neoplasm of large intestine and rectum	153-154, 197.5
Malignant neoplasm of trachea, bronchus, and lung	162, 176.4, 197.0, 197.3
Malignant neoplasm of breast	174-175, 198.81
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature	210-229, 235-239
Endocrine, nutritional and metabolic diseases, and immunity disorders	240-279
Diabetes mellitus	250
Volume depletion	276.5
Diseases of the blood and blood-forming organs	280-289
Mental disorders	290-319
Psychoses	290-299
Alcohol dependence syndrome	303
Diseases of the nervous system and sense organs	320-389
Diseases of the central nervous system	320-349
Diseases of the ear and mastoid process	380-389
Diseases of the circulatory system	390-459
Heart disease	391-392.0, 393-398, 402, 404, 410-416, 420-429
Acute myocardial infarction	410
Coronary atherosclerosis	414.0
Other ischemic heart disease	411-413, 414.1-414.9
Cardiac dysrhythmias	427

Appendix 1 (Continued)

Diagnostic groupings ²	Code numbers
Congestive heart failure	428.0
Cerebrovascular disease	430-438
Diseases of the respiratory system	460-519
Acute respiratory infections	460-466
Chronic disease of tonsils and adenoids	474
Pneumonia	480-486
Asthma	493
Diseases of the digestive system	520-579
Ulcers of the stomach and small intestine	531-534
Appendicitis	540-543
Inguinal hernia	550
Noninfectious enteritis and colitis	555-558
Cholelithiasis	574
Diseases of the genitourinary system	580-629
Calculus of kidney and ureter	592
Hyperplasia of prostate	600
Complications of pregnancy, childbirth, and the puerperium	630-677
Abortions and ectopic and molar pregnancies	630-639
Deliveries	640-648 ³ , 650, 651-676 ³
Diseases of the skin and subcutaneous tissue	680-709
Cellulitis and abscess	681-682
Diseases of the musculoskeletal system and connective tissue	710-739
Arthropathies and related disorders	710-719
Intervertebral disc disorders	722
Congenital anomalies	740-759

Appendix 1 (Continued)

Diagnostic groupings ²	Code numbers
Certain conditions originating in the perinatal period	760-779
Symptoms, signs, and ill-defined conditions	780-799
Injury and poisoning	800-999
Fractures, all sites	800-829
Fracture of neck and of femur	820
Intracranial injuries (excluding those with skull fracture)	850-854
Lacerations and open wounds	870-897
Supplemental classifications	V01-V82

¹See Reference 2 on page 32.

²Graves, Edmund J. and Owings, Maria F. 1995 National Hospital Discharge Survey. Advance Data From Vital and Health Statistics; No. 291. Hyattsville, Maryland: National Center for Health Statistics, 1997. <http://www.cdc.gov/nchs/data/ad/ad291.pdf>

³With fifth digit of "1" or "2".

Appendix 2: Procedure categories and code numbers based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*¹

Procedure categories²	Code numbers
Operations on the nervous system	01-05
Spinal tap	03.31
Operations on the endocrine system	06-07
Operations on the eye	08-16
Operations on the ear	18-20
Operations on the nose, mouth, and pharynx	21-29
Tonsillectomy with or without adenoidectomy	28.2-28.3
Operations on the respiratory system	30-34
Bronchoscopy with or without biopsy	33.21-33.24, 33.27
Operations on the cardiovascular system	35-39
Removal of coronary artery obstruction and insertion of stent(s)	36.0
Coronary artery bypass graft	36.1
Cardiac catheterization	37.21-37.23
Insertion, replacement, removal, and revision of pacemaker leads or device	37.7-37.8
Shunt or vascular bypass	39.0-39.2
Hemodialysis	39.95
Operations on the hemic and lymphatic system	40-41
Operations on the digestive system	42-54
Endoscopy of small intestine with or without biopsy	45.11-45.14, 45.16
Endoscopy of large intestine with or without biopsy	45.21-45.25
Partial excision of large intestine	45.7
Appendectomy, excluding incidental	47.0
Cholecystectomy	51.2
Repair of inguinal hernia	53.0-53.1
Lysis of peritoneal adhesions	54.5

Appendix 2 (Continued)

Procedure categories ²	Code numbers
Operations on the urinary system	55-59
Cystoscopy with or without biopsy	57.31-57.33
Operations on the male genital organs	60-64
Prostatectomy	60.2-60.6
Operations on the female genital organs	65-71
Oophorectomy and salpingo-oophorectomy	65.3-65.6
Bilateral destruction or occlusion of fallopian tubes	66.2-66.3
Hysterectomy	68.3-68.7, 68.9
Dilation and curettage of uterus	69.0
Repair of cystocele and rectocele	70.5
Obstetrical procedures	72-75
Episiotomy with or without forceps or vacuum extraction	72.1, 72.21, 72.31, 72.71, 73.6
Artificial rupture of membranes	73.0
Cesarean section	74.0-74.2, 74.4, 74.99
Fetal EKG (scalp) and fetal monitoring, not otherwise specified	75.32, 75.34
Repair of current obstetric laceration	75.5-75.6
Operations on the musculoskeletal system	76-84
Partial excision of bone	76.2-76.3, 77.6-77.8
Open reduction of fracture with internal fixation	79.3
Excision or destruction of intervertebral disc	80.5
Total hip replacement	81.51
Total knee replacement	81.54
Operations on the integumentary system	85-86
Mastectomy	85.4
Debridement of wound, infection, or burn	86.22, 86.28

Appendix 2 (Continued)

Procedure categories²	Code numbers
Skin graft	86.6-86.7
Miscellaneous diagnostic and therapeutic procedures	87-99
Computerized axial tomography	87.03, 87.41, 87.71, 88.01, 88.38
Pyelogram	87.73-87.75
Arteriography and angiocardiology using contrast material	88.4-88.5
Diagnostic ultrasound	88.7
Circulatory monitoring	89.6
Radioisotope scan	92.0-92.1
Respiratory therapy	93.9, 96.7
Other miscellaneous procedures	87.0-99.0

¹See Reference 2 on page 32.

²Graves, Edmund J. and Owings, Maria F. 1995 National Hospital Discharge Survey. Advance Data From Vital and Health Statistics; No. 291. Hyattsville, Maryland: National Center for Health Statistics, 1997. <http://www.cdc.gov/nchs/data/ad/ad291.pdf>

Appendix 3: Obstetrical definitions and code numbers based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*¹

1. Delivery: ICD-9-CM codes: 640-648*, 650, 651-676* [*with fifth digit of “1” or “2”].
2. Cesarean: Delivery with cesarean section as any listed procedure (ICD-9-CM codes: 74.0-74.2, 74.4, 74.99).
3. Previous cesarean: Delivery with any diagnosis of previous cesarean delivery (ICD-9-CM code 654.2, Uterine scar from previous surgery).
4. Primary cesarean: Delivery with no diagnosis of previous cesarean delivery.
5. Total cesarean delivery rate: Total cesareans divided by total deliveries, expressed as percentage.
6. Primary cesarean delivery rate: Primary cesareans divided by total deliveries minus previous cesareans, expressed as percentage.
7. Rate of vaginal deliveries after previous cesarean: Vaginal deliveries after previous cesarean divided by total deliveries after previous cesareans, expressed as percentage.

¹See Reference 2 on page 32.

Appendix 4: External cause of injury categories and code numbers based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*¹

Type of injury	Code numbers
Railway	E800-E807
Motor vehicle traffic	E810-E819
Motor vehicle non-traffic	E820-E825
Other road vehicle	E826-E829
Water transport	E830-E838
Air transport	E840-E845
Other vehicle	E846-E848
Place of injury ²	E849
Poisoning	E850-E869
Medical and surgical misadventure	E870-E879
Falls	E880-E888
Fire	E890-E899
Natural and environmental factors	E900-E909
Submersion and suffocation	E910-E915
Other unintentional	E916-E928
Late effects	E929
Adverse drug reaction	E930-E949
Self-inflicted	E950-E959
Assault	E960-E969
Legal intervention	E970-E978
Undetermined intent	E980-E989
War	E990-E999

¹See Reference 2 on page 32.

²Place of injury is supplementary to an external cause of injury code in the range E850-E869 or E880-E928

Appendix 5: Census population of Rhode Island as of April 1, 2000

Age Group	Population
Under 15 Years: All	207,171
Female	100,893
Male	106,278
15-44 Years: All	457,894
Female	232,223
Male	225,671
45-64 Years: All	230,852
Female	119,168
Male	111,684
65 Years and Older	152,402
Female	92,400
Male	60,002
All Ages	1,048,319
Female	544,684
Male	503,635

Source: Bureau of the Census, United States Department of Commerce